Virginia City Hybrid Energy Center
Response to Data Request
Vivian Thomson, Vice Chair, Virginia Air Pollution Control Board

Question April 30, 2008:

In the past the Board has approved another PSD permit (for the CPV Warren facility) that included requirements for NOX offsets. My understanding is that Dominion has also offered to offset a portion of its criteria pollutant emissions. I have asked DEQ staff for the details of that offer. (1) Could the Board require offsets for criteria pollutant or greenhouse gas emissions in the Virginia City Hybrid Energy Center permit? (2) If so, how could these offsets be physically accomplished?

Response:

The CPV Warren permit contains a voluntary arrangement for NO_X offsets to address concerns regarding visibility in Shenandoah National Park. Similarly the VCHEC permit contains a voluntary mitigation plan for SO_2 emissions to allay concerns of the National Forest Service.

1. Regulatory Basis for Emission Offsets

National ambient air quality standards (NAAQS) for specific criteria pollutants, which provide for the protection of public health and welfare with an adequate margin of safety, have been developed in accordance with the Clean Air Act (CAA). 42 U.S.C. § 7409(b). States, including Virginia, have been divided into air quality control regions which are designated, for each criteria pollutant, either attainment if the NAAQS is met or nonattainment if the NAAQS for a certain criteria pollutant is not met. 42 U.S.C. § 7407(d). The area in which Dominion has proposed to construct is designated attainment for all criteria pollutants.

The CAA and Virginia Air Pollution Control Regulations provide for offsets in the context of permitting in nonattainment areas only. 42 U.S.C. § 7503(c); 9 V.A.C. 5-80-2120; *see also,* Virginia Department of Environmental Quality New Source Review Permits Program Manual at A-124 to A-125 (April 1, 2002)(addressing offsets as requirement in nonattainment permit development only). Because the area in which Dominion has proposed to construct the Virginia City Hybrid Energy Center (VCHEC) is not a nonattainment area for any criteria pollutant, offsets are not appropriate for inclusion in the VCHEC permit.

Offsets are mentioned in the context of the Air Pollution Control Board's (Board) powers is in the context of development of emissions trading programs. Va. Code § 10.1-1322.3. This provision merely states that if the Board promulgates regulations providing for an emissions trading program it may consider the role of offsets in developing the emissions trading scheme.

Offsets are not applicable to the VCHEC permit where the proposed facility is to be located in an area that is designated attainment for all criteria pollutants and where the Board is considering a specific facility's permit, not a state-wide emissions trading scheme.

2. Emission Offset Mechanisms

While offsets cannot be required for VCHEC, three mechanisms have been used in practice to implement emission offsets. These are (1) banked Emission Reduction Credits (ERCs), (2) source specific permanent offsets associated with new development, and (3) the emission allowance markets. State managed ERC banks exist to allow development in non-attainment areas.

The ERC banks are setup to provide a mechanism for development in non-attainment areas. Facilities can document and get regulatory approval for emission reductions through the shutdown of emission units, conversion to lower emission processes, or more stringent permit limits. The resulting permanent emission reductions are then deposited in a bank for purchase by new major sources located in non-attainment areas.

Source specific permanent offsets are similar to the banked ERCs, but are directly linked to the new source development. As an example, Dominion's offer to convert Bremo to natural gas is in this category. Table 1 shows emission changes resulting from the Bremo conversion proposal.

Table 1. Virginia City vs Bremo Power Station Annual Potential Emissions Comparison

	Bremo (coal)[1]	Bremo (natural gas)	Bremo (net)	VCHEC	
				Permit Limit	Net Change
SO_2	13,463	11	-13,452	1,684[2]	-11,768
NO_X	4,755	1,144	-3,611	1,920	-1,691
PM_{10}	343	114	-229	329	100
CO_2	2,355,853	1,257,980	-1,097,873	5,300,000	4,202,127
Hg	171	0	-171	49	-122

1. Based on Consent Decree for SO2, NOx and PM and maximum capacity factor for CO_2 and mercury.
2. Includes mitigation required in draft air permit Condition 41.

National emission control strategies such as the Acid Rain Program and the Clean Air Interstate Rule are designed to reduce regional and national SO_2 and NO_X levels using emission caps. Sources are allocated emission allowances limited by the cap and allowed to trade the allowances with other regulated sources. Similar to Level 3 in the draft air permit Condition 41, allowances could be retired to offset VCHEC SO_2 and NO_X emissions.